

# CALIFORNIA STATE BOARD OF HEALTH

## MONTHLY BULLETIN

OCTOBER, 1913

No. 4

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# THE CALIFORNIA STATE BOARD OF HEALTH.

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## REGULAR MEETINGS.

The meetings of the California State Board of Health are held regularly the first Saturday of each month, but the quarterly meetings required by law to be held at the Capitol of the State are ordinarily designated as January, April, July, and October.

By courtesy of the University of California the Food and Drug Laboratory and the Hygienic Laboratory are located in University buildings at Berkeley, California.

Address all communications to the

SECRETARY, Sacramento, California



## SOME OF CALIFORNIA'S NEW HEALTH LAWS.

By WILLIAM F. SNOW, Secretary.

On May 12, 1913, the fortieth session of the California Legislature closed, and the Governor began his consideration of bills presented for approval. On June 16th the Governor completed his work, and California stood possessed of many new laws, which subsequently became operative August 10, 1913. Among these new laws the following briefly described statutes are of special importance to the public health:

### Water Supplies and Stream Pollution.

\*Chapter 373 (Statutes 1913)—*An act to prevent the supply of water dangerous to health for domestic purposes and to provide for the installation of sanitary water systems.*

This is a vitally important law as a weapon in fighting the introduction and spread of typhoid fever and other water-borne diseases. It makes it unlawful to supply or to continue to furnish for domestic uses water which is polluted or dangerous to health. This provision applies to the furnishing of water to "any person in any county, city and county, municipal corporation, village, district, community, hotel, temporary or permanent resort, institution or industrial camp.

Any "person, firm, corporation, public utility, municipal or other public body, institution, or corporation" desiring to supply or continue to supply water for domestic purposes is required to apply to the State Board of Health for a permit so to do.

General descriptions, histories, maps showing geographical location, sources of supply, and other necessary data are required to be filed with the application. The State Board is then required to make an investigation, during which hearings may be held and all factors relating to the influence of the water supplies upon health, considered. On completion of a favorable report the permit is granted.

Permits are revocable and reinvestigations may be made at any time. The expenses of investigations, except salaries of state officials, are chargeable to the applicants seeking the permits.

The provisions of the law exempt water supplies of less than two hundred service connections, until complaint is filed with the State Board of Health by a user of the water or a proper public official. Thus it will be seen that all water supplies within the State, except those for small towns of less than five to eight hundred population, are brought under surveillance for their sanitary condition; and any exempted supply may be immediately placed under investigation by complaint of an interested individual or a public officer.

The permit system becomes operative January 1, 1914, except for those water supplies which the State Board of Health may require to be investigated before that date.

In connection with the bill for this law, the Board presented a second bill providing for a sanitary engineer, and included in its financial budget an item of two thousand dollars for engineering equipment and expenses. It is to be regretted that the Governor could not see his way to approving these items for making this law effective. Unless plans can be devised for furnishing the Board with engineering assist-



ance, this law can be only partially enforced until the next Legislature meets.

\*Chapter 374 (Statutes 1913)—*An act to amend section 3 of an act entitled "An act for the preservation of the public health of the people of the State of California, and empowering the state board of health to enforce its provisions and providing penalties for the violation thereof," approved March 23, 1907, as amended April 1, 1911.*

This section of the law relates to the disposal of sewage by discharge into streams or bodies of salt water, the discharge into salt water being the addition of the 1913 Legislature.

The administration of the law is based upon provisions essentially similar to those outlined above for water supplies. In suggesting legislation of this character the State Board of Health holds the view that both the users of streams for disposal of sewage and the users of streams for domestic water supply are responsible to the public for safeguarding its health from water-borne diseases, and that the extent to which each is responsible varies according to local conditions which the State should determine.

#### Tuberculosis Control.

\*Chapter 385 (Statutes 1913)—*An act to provide for the establishment and maintenance of a department of tuberculosis under the direction of the state board of health; defining its powers and duties; and making an appropriation therefor.*

This formal recognition by the Legislature of the importance of tuberculosis as one of the great communicable diseases, enemies of the people, is most significant. The act provides a full time director for the work of the Board against this disease. It places under the State Board of Health "supervision over all hospitals, dispensaries, sanatoria, farm colonies and other institutions for tuberculosis," and provides for the advising of "officers of penal and charitable institutions regarding the proper care of tuberculous inmates."

Provision is made for an annual report on each tuberculosis institution in the State giving "its rating on sanitary construction, enforcement of sanitary measures, adequate provision for medical and nursing attendance, provision for proper food, and such other matters of administration as may be designated."

This law has resulted from the approval of one of the five bills covering the entire scheme for administrative control of tuberculosis recommended by the Tuberculosis Commission appointed by the State Board of Health in 1911. The other four bills were passed by the Legislature, but with such small appropriations the Governor considered it unwise to approve them. In addition to the above provisions, this law creates an advisory board of four members appointed by the Governor. The director serves as secretary of the advisory board. This board has no executive authority, but any executive act of the State Board of Health which is taken without the approval of the advisory board must be immediately reported to the Governor. The report must give the reasons for the action, and include the reasons for disapproval of the advisory board.

The tuberculosis workers of California believe this law will result



in a marked advance in the control of tuberculosis during the next two years.

#### **New Contagious Disease Act.**

\*Chapter 422 (Statutes 1913)—*An act to prevent the introduction, and provide for the investigation and suppression of contagious or infectious diseases, and appropriating money to be used for such purpose.*

This important law authorizes the State Board of Health to declare "any land, place, building, structure, wharf, pier, dock, vessel or water craft infested with rodents, insects, or other vermin which are liable to convey or spread contagious or infectious disease" to be an "existing focus" of such disease. Thereupon the Board may notify all persons concerned within the area specified to exterminate the carriers of disease named. The provisions of this law are simple but promise to be effective.

Failure to comply with the terms of the notification authorizes the Board to do the work and collect the costs from the county, these costs then becoming a lien against the property. This part of the law is particularly applicable to the fight against bubonic plague, as explained in the September number of the bulletin.

Other provisions of this law authorize the Board under direction of the Governor to take action against any other important "contagious or infectious" disease which may invade the State or demand special measures for control. One hundred thousand dollars is provided for the enforcement of the law.

#### **Rabies.**

\*Chapter 369 (Statutes 1913)—*An act to prevent the introduction of rabies or other animal diseases dangerous to human beings, into portions of the state not infected; to control the spread of such diseases after introduction; and authorizing the state board of health to make rules and regulations therefor.*

This is a new law, both in its methods of administration and its plan for meeting the expense of enforcement. Briefly, the law provides that the State Board of Health may declare quarantine areas for rabies, whenever the disease appears, and until the quarantine order is modified, the strictest isolation of all dogs or other animals specified under restraint on the premises of the owners, is required. Animals violating the order may be shot and their owners arrested.

A special dog tax automatically becomes effective when the quarantine order is issued, and remains in force until the area is declared free from the disease. The taxes thus collected are deposited in a "rabies treatment and eradication" fund, to defray the expenses of stamping out the disease.

#### **Cold Storage and Food and Drug Laws.**

\*Chapter 360 (Statutes 1913)—*An act relating to cold storage, the regulation of refrigerating warehouses, the disposition or sale of food kept or preserved therein, and defining the duties of the state board of health in relation thereto.*

This is one of the pioneer laws on this subject in the United States. Properly administered it should do much toward popularizing cold storage products and securing to the people the benefits, in lowered



“cost of living,” of applying the principle of cold storage to preserving until needed all foods produced.

The law requires all public cold storage plants to operate under a permit system, specifying the details for sanitary inspection, etc., upon which the permit is granted. All permits are revocable. An annual license fee of \$50 is named.

No foods may remain in storage longer than one year without specific approval of the State Board of Health. Quarterly reports of food in storage are required to be filed. This is undoubtedly one of the most important laws relating to health passed by the last Legislature.

\*Chapter 358 (Statutes 1913). Is an amendment of the present pure drug law, designed to prevent the false or fraudulent labeling of any drugs.

Chapter 79 (Statutes 1913). Relates to certified milk, cream and ice cream.

Chapter 167 (Statutes 1913). Relates to labeling all foodstuffs with the net quantity clearly indicated on the container.

Chapter 233 (Statutes 1913). Relates to penalties for the destruction, in restraint of trade, of any animal, vegetable or other food for human beings.

#### Housing and Sanitation of Camps.

Chapter 356 (Statutes 1913)—*An act to amend an act entitled, “An act to regulate the building and occupancy of tenement houses in incorporated towns, \* \* \* and to provide penalties for the violation thereof \* \* \*.”*

This act has been most carefully planned upon the experience gained from the operation of the previous acts. The law is too long and too technical to abstract profitably, but the Legislature authorized the printing of a large number of extra copies, which are available for distribution.

Chapter 695 (Statutes 1913)—*An act to regulate the building and occupancy of hotels and lodging houses in incorporated towns, \* \* \* and to provide penalties for the violation thereof.*

This is a new law, designed to reach buildings not brought under the provisions of the tenement house act.

Chapter 246 (Statutes 1913). Relates to the acquisition by municipalities of land for public park or playground purposes by condemnation, and to a method of taxation to provide for the same.

Chapter 182 (Statutes 1913)—*An act regulating the sanitation and ventilation in and at camps where five or more persons are employed; and providing a penalty for the violation thereof.*

This law provides that “bunkhouses, tents and other sleeping places of such employees shall be kept in a cleanly state, and free from vermin and matter of an infectious and contagious nature, and the grounds around such bunkhouses, tents or other sleeping places shall be kept clean and free from accumulations of dirt, filth, garbage and other deleterious matter.” The other provisions of the law cover details of construction, air space, equipment, etc.

This law places the enforcement of its provisions in the hands of the State Board of Health, but no appropriation is made. Plans for its



enforcement through co-operation with the State Labor Bureau have been made, and it is expected that it will prove a useful measure in raising the standard of housing conditions.

#### Registration of Nurses.

Chapter 319 (Statutes 1913)—*An act to promote the better education of nurses and the better care of the sick in California \* \* \* and to provide for the issuance of certificates of registration as registered nurses to qualified applicants \* \* \*.*

The administration of this law is assigned to the State Board of Health. It is unlike other laws of this character, in that it does not prohibit any one from nursing. The object of the law is to set a standard of education for the competent trained nurse and to give under state authority the title of R.N. (Registered nurse) to those properly qualified.

The law establishes a bureau within the State Board of Health under the direction of a graduate registered nurse, and provides for the accrediting of training schools, whose graduates then become eligible to take the examinations for the R.N. title. This is a much needed law which should result in benefit to the people and in a marked increase in the efficiency of the training schools for nurses in California. The special public health value of this law lies in the opportunity of the director and corps of examiners for popular education of the people as to the important part careful nursing plays in the treatment and prevention of disease.

#### Control of Venereal Diseases.

Chapter 354 (Statutes 1913). Relates to a new medical practice act which is also different from other acts of its type. The provisions of the act, which are of special importance to public health, relate to the revocation or suspension of the certificate of any person licensed to practice, when it has been proved that he is guilty of unprofessional conduct in the following particular: "Advertising, announcing or stating, directly, indirectly, or in substance, by any sign, card, newspaper advertisement, or other written or printed sign or advertisement, that the holder of such certificate or any other person, company, or association by which he is employed or in whose service he is, will cure or attempt to cure, or will treat, any venereal disease, or will cure or attempt to cure or treat any person or persons for any sexual disease, for lost manhood, sexual weakness, or sexual disorder; or being employed by, or being in the service of, any person, firm, association, or corporation so advertising, announcing, or stating."

This provision should enable the State Medical Examiners to co-operate with the health authorities in a very effective crusade against the unprincipled medical men who must be fought in any campaign against venereal diseases.

Chapter 17 (Statutes 1913)—*An act declaring all buildings and places nuisances wherein or upon which acts of lewdness, assignation or prostitution are held or occur or which are used for such purposes, and providing for the abatement and prevention of such nuisances by injunction and otherwise.*

This law has been delayed in operation by the filing of a referendum



petition, which will be voted upon in the fall of 1914. If operated fearlessly and justly such a law should be an effective aid in the battle against venereal diseases.

#### Asexualization of Defectives.

Chapter 363 (Statutes 1913)—*An act for the asexualization of inmates of state hospitals for the insane, the Sonoma State Home (home for feeble-minded children), of convicts in the state prisons, and of idiots \* \* \**

This law is really an amendment to the former statute on this subject. The object of the change is to add the following provision: "Any idiot if a minor, may be asexualized by or under the direction of the medical superintendent of any state hospital, with the written consent of his or her parent or guardian, and if an adult, then with the written consent of his or her lawfully appointed guardian, and upon the written request of the parent or guardian of any such idiot or fool, the superintendent of any state hospital shall perform such operation or cause the same to be performed without charge therefor."

The working out of this new provision of the law will be of interest, and should furnish valuable information upon many questions that arise in applying the principles of eugenics to our social conditions of living.

#### Other Laws.

There were many other important laws which will indirectly aid the advancement of the public health. Several of these laws relate to immigration, and to conditions under which women and children may work; others relate to factories, the provision of emergency appliances with which to care for accidents, etc. The State Board of Health was provided with two thousand dollars with which to investigate and build up the reporting of occupational diseases. A special commission, composed of the State Commissioner of Horticulture, the State Veterinarian, and the Secretary of the State Board of Health, was created to investigate the influence of smelter wastes upon vegetable, animal and human life, and five thousand dollars appropriated for the work.

#### Some Bills Which Remained Bills.

Among the bills which passed the Legislature but failed to receive the approval of the Governor the following are of importance to the public health movement. They are simply listed by number and title in order that copies of them may be procured if desired.

- S. B. 974—Medical treatment for tuberculosis.
- S. B. 1094—Sanatoria for tuberculous patients.
- S. B. 1239—Tuberculosis dispensaries.
- S. B. 1367—Protection of the public from tuberculosis.
- A. B. 1126—Health certificate for marriage.
- A. B. 1463—Malarial mosquito control districts.
- \*S. B. 123—Licensing hospitals and hospital nurses.
- S. B. 215—Amending the occupational disease law.
- \*A. B. 235—Providing county sanitary inspectors.
- A. B. 1318—Amending the pure food and drug law.



Other bills of interest to public health workers which failed to reach the Governor are:

- S. B. 363, 1566—Sanitation of shellfish grounds and sale of oysters.
- S. B. 674, 901, 1247, 1288—Amendments to pure food law.
- S. B. 975—Placing dead animals in streams.
- S. B. 1286—Experiment station for sewage and water supplies.
- S. B. 986—Relating to sanitary conditions in schools.
- S. B. 1385—Providing for health of factory employees.
- S. B. 1096—Dissemination of knowledge sex hygiene.
- \*S. B. 1097—Investigation prevalence venereal diseases.
- S. B. 175—Investigation malaria and mosquitoes.

These references to bills given serious consideration by the Legislature or the Governor are mentioned as types to illustrate the wide range of interest in health conservation.

The bills and laws starred (\*) were introduced by the State Board of Health as necessary measures in advancing its work along lines mentioned here were introduced by representative organizations, such as the State Federation of Women's Clubs, the State Tuberculosis Association, the California Social Hygiene Society, the Women's Christian Temperance Union, the Public Health League, and various business organizations.



## REGULATIONS FOR THE CONTROL OF RABIES.

The following regulations for the enforcement of the new law relating to the control of rabies are printed as being of general interest to the readers of the bulletin. It is believed that this law may be made a factor in stamping out this dangerous disease, which should never have been permitted to spread from its original focus, but which has spread to a large area of the State:

### REGULATIONS FOR THE ENFORCEMENT OF AN ACT TO PREVENT THE INTRODUCTION AND SPREAD OF RABIES.

(Chapter 369, Statutes of 1913.)

**Rule 1.** Any person owning, or having the charge of, or observing, any animal which he shall know or suspect to be affected with rabies shall immediately confine such animal, if this can be brought about with reasonable safety, and shall at once give notice to the local health authority of the whereabouts of such animal and the reasons for believing it to be affected with rabies.

NOTE.—The diagnosis of rabies may be difficult and may require the judgment of an experienced physician or veterinarian, but any of the following symptoms should be considered as sufficient evidence for suspecting rabies and reporting the animal, under the provisions of this rule, for further investigation:

- (1) Sudden change in disposition.
- (2) Unusual nervousness or irritability.
- (3) Tendency to leave home.
- (4) Change in voice.
- (5) Refusal to eat.
- (6) Tendency to snap or bite without provocation.
- (7) Weakness or paralysis of the legs or lower jaw.

**Rule 2.** Every local health authority upon receiving information of the existence of rabies must immediately make an investigation and within twenty-four hours thereafter must report fully in writing to the State Board of Health, except as provided in Rule 4.

**Rule 3.** Animals confined under suspicion of having rabies shall be kept under proper care and observation and shall not be killed or released until ten days shall have elapsed dating from the beginning of the confinement. If the animal dies or has been killed under suspicion of having rabies, its head shall be sent to the state or municipal laboratory for examination.

NOTE.—See appended directions for sending specimens to the laboratory.

**Rule 4.** When the State Board of Health shall declare a quarantine against certain designated animals within a specified area, on account of the existence of rabies, all such animals within such area shall be kept in strict confinement upon the private premises of the owners under restraint by leash or closed cage or paddock. In areas already under quarantine, or special regulations substituted for quarantine (chapter 369, section 2, Statutes of 1913), the provisions of Rule 3 may be abridged or modified at the discretion of the local health



authority and the reports required in Rule 2 may be made monthly, unless the state board of health shall specify to the contrary.

NOTE.—Specified areas, districts, subdivisions, and similar terms in these rules, do not necessarily follow city or county lines, but refer to areas whose boundaries are determined by the extent of the infection and the territory endangered thereby. By declaration of quarantine is meant the formal notice that a given area is placed under quarantine for rabies by the state board of health. This notice will be sent by letter or telegram to the local health authority, who will proceed as an agent of the state board of health to enforce the provisions of the law.

**Rule 5.** If the State Board of Health, after the establishment of quarantine, substitutes for Rule 4 such regulations as may be deemed adequate (section 2, chapter 369, Statutes of 1913), failure to enforce such substitute regulations strictly will be followed by a return to the enforcement of the full regulations of quarantine (see Rule 4) or such changes in the regulations as may be deemed advisable by the State Board of Health.

NOTE.—Regulations substituted for quarantine will be based on the special conditions in the area under consideration, and will be determined by the state board of health in conference with the local health authority.

The following illustrates measures which may be incorporated, singly or in combination, in regulations adopted for enforcement under this rule:

(1) Restriction of dogs to enclosed premises of owner, and appearance on street under leash, provided they are not taken upon public conveyances.

(2) Permission for dogs to run at large if wearing a muzzle of approved type.

(3) Exemption of dogs from muzzling requirement while engaged in hunting or herding under supervision.

(4) Extension of this exemption to all dogs in a specified subdivision of the area under regulation, provided that these dogs are not taken out of this subdivision.

**Rule 6.** When established, the quarantine period inclusive of the time during which regulations may be substituted for quarantine must cover a continuous period of six months before the State Board of Health will consider release from quarantine or from the substituted regulations.

NOTE.—The period of six months has been designated because this length of time covers the incubation period for practically all cases of rabies.

The state board of health will not make a quarantine order when it appears on investigation that the infection is strictly limited to the animal exhibiting the disease, and that all contacts are under control.

**Rule 7.** When an area has been declared by the State Board of Health to be under quarantine, or regulations substituted for quarantine, on account of rabies, no dog shall be taken, or allowed to go, into or out of such area, except upon presentation of a written permit from the secretary of the State Board of Health, or a representative authorized by the State Board of Health to issue permits under certain conditions prescribed by the board.

NOTE.—The permit specified in Rule 7 will ordinarily be issued for animals from uninfected areas and for animals brought in for temporary exhibition purposes in theaters, bench shows, etc., provided these latter animals are kept segregated from other animals in the area.

**Rule 8.** It is the duty of all peace officers and local health authorities to enforce the requirements of the quarantine or regulations declared by the State Board of Health (see sections 3, 4, and 5, chap-



ter 369, Statutes of 1913, which act of the legislature will be found printed in full in this circular).

**Rule 9.** During such time as the quarantine, declared by the State Board of Health or the regulations substituted by the board, shall be in force in an area, each treasurer of a county, city and county, or incorporated city or town, situated in whole or in part in the area specified, will be expected to make a monthly report to the State Board of Health, stating the methods and amounts of the collections and disbursements of the moneys of the rabies treatment and eradication fund, and the total amount of money on hand in the fund. (See sections 6 and 7, chapter 369, Statutes of 1913, regarding the establishment of the fund.)

#### GENERAL DIRECTIONS.

##### Directions for Sending Material to the State Hygienic Laboratory for Examination for Rabies.

Where possible, the animal suspected of having rabies should be confined and kept under observation until it dies. If it is killed in an early stage of the disease, diagnosis from microscopic examination is apt to be difficult, and results are delayed by the necessity for other tests. A rabid animal generally dies within six days. If the animal is well at the end of ten days, rabies may be excluded and examination of the brain is not necessary.

If it is necessary to kill a rabid animal, it should not be shot or injured in the head. The brain is the part required for examination, and injury to it makes diagnosis difficult or impossible.

After the death of the animal, the head should be removed by cutting through the neck far enough back to leave the skull intact. Care should be taken not to cut or lacerate the hands during the operation.

Pack the entire head in ice in a metal container, *e. g.*, a tin pail or can. An excellent method of packing is to place in a large tin pail or can a layer of sawdust or shavings, a layer of ice, and then the head. Cover with an abundant layer of ice and add a top layer of sawdust. A suitable metal cover should be soldered in place so that there is no possibility of the escape of liquids or odors in the express car. Mark plainly, giving the name of the shipper. Send by express, without delay, to the State Hygienic Laboratory, Berkeley, California. Express charges must be prepaid.

A letter describing in detail the local situation with regard to rabies will be appreciated.

The following blank is furnished by the laboratory. If it is not at hand, write a letter giving the data indicated:



## CALIFORNIA STATE BOARD OF HEALTH.

State Hygienic Laboratory, Berkeley.

Please fill out this side of blank in full, and send with specimen to laboratory.

## Material for Examination for Rabies.

Sender's name ----- Address -----  
 Health Officer's name ----- Address -----  
 Name of owner of animal ----- Address -----  
 Description of animal whose head is sent -----  
 Where was the animal found? -----  
 Was animal killed or allowed to die? ----- How long sick? -----  
 Diagnosis from symptoms -----  
 What other animals were bitten by this one? -----  
 What human beings were bitten? -----  
 Is report to be sent by telegraph (collect), telephone (collect) or mail? -----  
 To whom? -----

## Directions Regarding the Pasteur Treatment for the Prevention of Rabies.

If a person has been bitten by a rabid animal, it is recommended that the wound be cauterized immediately by the nearest physician, preferably with nitric acid. Arrangements should then be made at once for the Pasteur treatment for the prevention of rabies.

Persons who are able to pay for treatment without undue hardship should arrange with their physicians to have the necessary material purchased and administered. The antirabic virus manufactured by the State Board of Health is not for sale, and is not sent out to physicians.

Each person who is in need of the Pasteur antirabic treatment and is unable to pay the expense connected with private treatment without undue hardship should report immediately to the local health authority, or, if this is not possible, to a private physician. If treatment by the State Board of Health is recommended, the following blanks should be signed by the appropriate persons and should be given to the patient to be presented at the State Hygienic Laboratory, or one of its branches, or a municipal laboratory where the free state treatment is being administered.

## APPLICATION TO THE CALIFORNIA STATE BOARD OF HEALTH FOR THE PASTEUR TREATMENT FOR THE PREVENTION OF RABIES.

## Application of Patient or Parent or Guardian.

I hereby apply to the California State Board of Health for the Pasteur treatment for the prevention of rabies, and declare that it would be a hardship for me to pay for the treatment at the usual rates.

-----  
Patient, Parent, or Guardian.

## Statement of Local Health Authority or Physician.

The following named person has reported to me regarding the need for antirabic treatment by the State Board of Health:

-----  
I have examined the wounds and have inquired into the circumstances, and I believe that there is a possibility that the above-named person has been infected with the virus of rabies.

Date -----

-----  
Local Health Authority, or Physician.



This part of the blank should be filled out, torn off at the line and mailed at once by the local health authority or physician to that branch of the laboratory to which the patient is sent.

I have to-day directed the following person to apply at once to the -----  
----- laboratory for antirabic treatment by the State Board  
of Health.

Name of patient -----

Remarks :

Date -----

-----  
Local Health Authority, or Physician.

The patient should go as soon as possible to the nearest branch of the State Hygienic Laboratory and should present the written statements of himself and the local health authority or physician to the director. If the director of the laboratory agrees that treatment is advisable the Pasteur treatment will be administered without charge. Persons taking the treatment at state expense must defray their own living expenses while boarding near the laboratory. If funds for this purpose are not available, the local health authority will advise as to the proper procedure.

The following cities have arranged for the administration of the state antirabic virus to their citizens at the laboratories of their Health Departments: San Francisco, Los Angeles, and Sacramento.

Citizens from other parts of California are treated at the nearest one of the following branches unless there is special reason for transferring patients from one laboratory to another :

The State Hygienic Laboratory, Hygiene and Pathology Building, University of California, Berkeley.

The Northern California Branch of the State Hygienic Laboratory, 406 Inverness Building, Sacramento.

The San Joaquin Valley Branch of the State Hygienic Laboratory, 32 Patterson Block, Fresno.

The Southern California Branch of the State Hygienic Laboratory, 423 Auditorium Building, Los Angeles.

If a local authority learns that persons have been bitten by a rabid animal, inquiry should be made to find out whether they have come under treatment. If they have not done so, the risk of developing rabies and the seriousness of the disease should be explained to them. If they still fail to come under treatment, a statement of the circumstances should be written and sent to the Secretary of the State Board of Health.



## STATE LAWS.

## CHAPTER 369.

An act to prevent the introduction of rabies or other animal diseases dangerous to human beings, into portions of the state not infected; to control the spread of such diseases after introduction; and authorizing the state board of health to make rules and regulations therefor.

[Approved June 13, 1913.]

*The people of the State of California do enact as follows:*

SECTION 1. Whenever any case or cases of rabies, or other animal diseases dangerous to the health of human beings which may be declared by the state board of health as coming under the provisions of this act, shall be reported as existing in any county, city and county, or incorporated city or town in the State of California, the state board of health shall make, or cause to be made a preliminary investigation as to whether such disease does exist, and as to the probable area of the state in which the population or animals are thereby endangered. If upon such examination the state board of health shall find that any of the said diseases does exist, a quarantine shall be declared against all such animals as may be designated in the quarantine order, and living within the area specified in said order. Quarantine shall be defined for the purposes of this act as meaning the strict confinement, upon the private premises of the owners under restraint by leash or closed cage or paddock, of all animals specified by the order.

SEC. 2. Following the order of quarantine the state board of health shall make or cause to be made a thorough investigation as to the extent of the disease, the probable number of persons and animals exposed, and the area found to be involved; and may substitute for the quarantine order such regulations as may be deemed adequate for the control of the disease in each area.

SEC. 3. It shall be the duty of all peace officers and boards of health to carry out the provisions of this act. During the period for which any quarantine order is in force all officers are empowered to kill or in their discretion to capture and hold for further action by the state board of health or its representatives, all animals in a quarantine area, found on public highways, lands and streets, or not held in restraint on private premises as specified in this act.

SEC. 4. All proper officials within the meaning of this act are hereby authorized to examine and enter upon all private premises for the enforcement of this act.

SEC. 5. Any owner, or other person in the possession of any animal then being held or maintained in violation of the provisions of this act, shall be subject to arrest on the charge of committing a misdemeanor.

SEC. 6. For the purpose of providing funds to pay the expenses incurred in connection with the eradication of diseases included under this act, a special fund, to be known as the rabies treatment and eradication fund, is hereby created for each county, city and county, or incorporated city or town in the State of California. All moneys collected



in accordance with the following procedure shall be deposited to the credit of this fund with the treasurer of the county, city and county, or incorporated city or town; *provided*, that funds now collected from any dog tax may continue to be collected and used for other purposes specified by local ordinances.

(a) Upon the determination by the state board of health that rabies does exist in any county, city and county, or incorporated city or town, a special dog license tax shall immediately become effective, unless a dog tax is already in force the funds from which are available for the payment of expenditures in accordance with the provisions of this act. This tax shall be levied as follows: An annual tax of one dollar and fifty cents for each male, two dollars and fifty cents for each female, and one dollar and fifty cents for each neuter dog, the same to be collected by the proper authority at the same time and in the same manner as other taxes are collected; *provided, however*, that there shall be collected at the first collection such proportion of the annual tax as corresponds to the number of months the tax has been in operation plus one year advance payment. After this dog license tax has been established in a county, city and county, or incorporated city or town, it shall be continued in force until an order has been issued by the state board of health declaring that county, or such portion of that county as may be deemed advisable, to be free from rabies or further danger of its spread.

(b) One half of all fines collected by any court or judge for violations of the provisions of this act shall be placed to the credit of the rabies treatment and eradication fund of the county, city and county, incorporated city or town in which the violation occurred.

SEC. 7. Whenever it becomes necessary in the judgment of the state board of health or its secretary, to enforce the provisions of this act in any county, city and county, or incorporated city or town, the said board or its secretary may institute special measures of control to supplement the efforts of the local authorities in any county, city and county, or incorporated city or town whose duties are specified in this act. All expenditures incurred in enforcing such special measures shall be proper charges against the special fund created by the provisions of this act, and shall be paid as they accrue by the proper authorities of each county, city and county, or incorporated city or town in which they have been incurred; *provided*, that all such expenditures which may be incurred after the issuance of the order establishing the said fund and before the first collection of the tax, shall be paid as they accrue from the general fund of the county, city and county, or incorporated city and town; *and provided, further*, that all expenditures in excess of the balance of money in this fund shall likewise be paid as they accrue from said general fund. All moneys thus expended from the general fund shall be repaid from the said special fund when the collections from said tax have been provided the money.



## CHAPTER 391.

An act to authorize the state board of health to purchase, or prepare, and distribute, free of cost, to certain persons, anti-rabic virus, and making an appropriation therefor.

[Approved June 13, 1913.]

*The people of the State of California do enact as follows:*

SECTION 1. The state board of health is hereby empowered and directed to purchase, or prepare, and distribute free of cost, under such regulations as may be necessary, anti-rabic virus to be used in the treatment of persons exposed to rabies when said persons shall declare that it would be a hardship for them to pay for anti-rabic treatment.

SEC. 2. The sum of five thousand dollars is hereby appropriated for the purposes of this act.

SEC. 3. The state controller is hereby authorized to draw his warrant for the same, and the state treasurer is hereby authorized to pay the same.



## REPORTS FOR MONTH OF SEPTEMBER.

### Proceedings of the State Board of Health.

The Board met in regular session Saturday, September 6, 1913. In addition to the food hearings and other routine business, the following items of special interest were considered: The election of a director for the department of registration and examination of nurses was considered and action deferred until the October meeting. Rules for the enforcement of the cold storage law were also considered and deferred for further report by the Food Inspection Committee.

Plans for enforcing the new laws governing the sanitation of water supplies, and sewage disposal into salt waters, were discussed, but no final action was taken.

The Secretary and Director of the Hygienic Laboratory were instructed to prepare rules and regulations in accordance with the provisions of the new rabies control law, and to report at the next meeting.

The new law requiring the vice president to act as executive officer during the absence of the Secretary, or a vacancy in the office of Secretary, was discussed, and Dr. Wills, who lives in Los Angeles, resigned as Vice President in order to nominate Dr. Parkinson of Sacramento. Dr. Parkinson was elected. Mr. W. H. Gourley was reappointed a food and drug inspector.

A telegram was received from the Secretary, stating that the Government had agreed to expend \$40,000 additional on the plague campaign, prior to July next, with the expectation that the situation would then be controlled by the State, with the aid of the Government's laboratory and commissioned officers stationed in California.

A number of special investigation reports on sewage disposal, laboratory investigations, etc., were presented and filed for future action.

### Report of the Secretary.

The following items from the report of the Secretary are of general interest:

During the month the Secretary completed the details of the intensive campaign against plague infection among the ground squirrels in the infected area as outlined in the September bulletin. This important work is expected to proceed without interruption during the coming year.

On September 11th a man died of bubonic plague at Martinez, Contra Costa County. He was fifty-five years old, a "laborer" by occupation, and had been working on a "ranch" in this county. On September 8th he entered the county hospital. On the following day he was delirious, developed a femoral bubo on the tenth and died early on the morning of the eleventh. The case was proved by laboratory examination both in the Federal and the State Board laboratories.

The epidemiological data indicates that this man was infected through fleas from rats having the disease. He lived in a very insanitary way in a cabin on the marshes near Pittsburg. This cabin was infested with rats, according to statements of his friends, and those rats had been observed to be "sick." At the time of his death no rats could be found



in the vicinity of his cabin, but the known infection among the squirrels in this part of the county lends probability to this source of infection. Prompt measures were instituted to exterminate all rats and squirrels in a zone about Pittsburg. It is not believed that other cases will occur.

Arrangements have been completed with Surgeon General Blue for the detail of Dr. C. W. Stiles from the United States Hygienic Laboratory to co-operate with the Board in a survey of hookworm disease in California.

Captain C. G. Snow of the United States Army, stationed at the Letterman General Hospital in San Francisco, has been appointed a deputy of this Board to administer antirabic virus. The increase in prevalence of rabies, particularly in Oakland and Berkeley, is a matter for serious concern. The enforcement of the new law should be carried out wherever the local officials are not effectively coping with the situation.



## BUREAU OF ADMINISTRATION

JOHN F. LEINEN, Director.

The routine work has been heavy for the month of September. An unusually large number of petitions and complaints concerning dangerous nuisances, caused by disposal from towns and cities, have been filed, and assigned to local officials or the consulting engineer for adjustment.

The dry season and other factors which have resulted in a shortage of water supply for many towns have developed a number of complicated and serious problems of safeguarding the public from typhoid outbreaks. Thus far the measures adopted have been successful.

The morbidity statistical tables have been transferred to the Bureau of Vital Statistics report. The outbreaks of communicable diseases indicated in these tables have occasioned considerable administrative supervision during the month.

Under instructions from the Board an investigation of laws and regulations relating to burial of the dead has been carried on. A number of interesting facts have been developed through this correspondence.

It was found on investigation that only three states have laws governing the depth of graves. Connecticut forbids the burial of any corpse within four feet of the surface of the ground. New Jersey demands that a body be buried so that the top of the coffin is four feet below the natural surface of the ground, while New York's law states that a body must be buried at a depth of six feet.

Cemetery regulations in different states provide for the number of interments in a single grave, some allowing two at long intervals of time, some permitting three, but the majority stating that one alone will be permitted.

A circular letter was sent out by the State Board in an endeavor to ascertain if California cemeteries regulated the size of graves permitted in a given area, the depth of interment, or the number of bodies buried in each grave.

All replies received stated that no regulations existed governing the number of graves permitted. And that all graves are dug to "the regular depth of six feet." No general regulation exists as to the number of bodies to be buried in a grave. One cemetery has a rule which forbids the burial of more than one body, unless it be that of a mother with her infant.

It is interesting to know that in this State no regulations are in force concerning the precautions for disinterment or for opening a grave for the interment of an additional body.

The Board has the sanitary phases of this matter under consideration at the present time.



## BUREAU OF TUBERCULOSIS.

B. F. HOWARD, M.D., Director.

This Bureau was created by the last Legislature for the registration of all tuberculous persons in the State and for the inspection and supervision of institutions treating or housing them.

It has for its general object the continuation of the work begun by the Tuberculosis Commission on the study and prevention of tuberculosis.

The Director assumed the duties of his office on September 1st, and the month was spent in organization, becoming familiar with what had already been accomplished, getting in touch with certain organizations identified with tuberculosis work, and in visiting various institutions in the northern and central parts of the State.

The work of inspection and supervision of institutions is to be pushed as rapidly as possible, with a view to the improvement of existing conditions and the establishment of a standard of institutional work.

It is hoped that in the work of obtaining registration of all cases of open pulmonary tuberculosis the Bureau will have the support and co-operation of the physicians of the State, and that all health officers will take every available means to get these cases reported.



## BUREAU OF REGISTRATION OF NURSES.

ANNE C. JAMMÉ, R.N., Director.

NOTE.—Miss A. C. Jammé has just been elected director of this bureau. The preliminary statement below is of general interest to physicians and the public as well as to nurses.

The first steps in the organization of the Bureau will be the registration of applicants. This will mean a careful examination of credentials before conferring the certificate of Registered Nurse. A form of application blank, that will give the desired information as to birth-place, age, character of education before entering the training school, the name and location of the school, character of the training school, whether medical, surgical, obstetrical, work after graduation, and if the applicant is already registered in another state. A certificate of health signed by a physician. Also a certificate signed by the present superintendent of the training school from which the applicant graduated should accompany the application blank.

Later in the work of organization, a standard curriculum will be established in order that uniform methods of teaching may be adopted by the training schools in preparing their pupils for state examination.

The work of development may be along the following lines:

1. To maintain ethical and educational standards in nursing.
2. To promote ethical and educational knowledge among nurses of the State.
3. To improve methods of teaching in training schools.
4. To promote affiliation between training schools.
5. To encourage post-graduate study.
6. To lay special emphasis on the distinctively nursing element in nursing education.
7. To endeavor to promote a wholesome knowledge of the work of nursing in the minds of the public.
8. To encourage preliminary education relative to the study of nursing in high schools and colleges of the State.
9. To encourage special preparation for teachers of nursing.



## REPORT OF THE BUREAU OF THE HYGIENIC LABORATORY.

WILBUR A. SAWYER, M.D., Director.

### Two Human Deaths from Rabies.

A Japanese man was bitten by a rabid dog on June 30th in San Bernardino. The dog's head was sent at once to the State Hygienic Laboratory, and examination of the brain showed Negri bodies, proving definitely that rabies was present. The results were telegraphed and the man was instructed to go to the Southern Branch of the Laboratory for the free Pasteur treatment. Contrary to instructions, he delayed until August 2d, the thirty-third day after he was bitten, before reporting. Two days later symptoms of rabies (hydrophobia) made their appearance and death occurred on August 9th.

On September 17th a man died at Santa Rosa with the typical symptoms of rabies. He had been bitten in the wrist by his own dog, about thirty days before, while hunting near Bodega Bay. Although the dog had been acting queerly before it attacked its master, it was killed and no attempt was made to find out for certain whether it had rabies.

An examination of the man's brain was made at the State Hygienic Laboratory and the diagnosis of rabies was definitely confirmed by the finding of Negri bodies. A rabbit which was inoculated with some of the brain tissue died of rabies fourteen days later. Negri bodies were found in the rabbit's brain.

As the man's son was bitten by the same dog at about the same time, the Pasteur treatment was begun at the State Hygienic Laboratory as soon as the cause of the father's death was determined. A horse, which was bitten by the same dog, developed rabies and was cared for by a man whose hands had been recently lacerated. This man is receiving the Pasteur treatment at the laboratory.

### A Fatal Human Case of Bubonic Plague.

A man who had been employed on a ranch near Pittsburg died from bubonic plague in the Contra Costa County Hospital at Martinez on September 11, 1913. Plague bacilli were isolated in pure culture from the diseased tissues and the identity of the bacilli was proved by cultural and inoculation tests both at the laboratory of the United States Public Health Service in San Francisco and at the State Hygienic Laboratory.



## Division of Biological Examinations.

*Summary of Examinations Made in the California State Hygienic Laboratory During the Month of September, 1913.*

Condition suspected	Positive	Negative	Inconclusive	Total
<b>Main Laboratory at Berkeley:</b>				
Anthrax -----	6	2	-----	8
Diphtheria -----	14	15	-----	29
Gonococcus infection -----	9	16	-----	25
Malaria -----	1	3	-----	4
Plague -----	1	-----	-----	1
Rabies -----	21	1	-----	22
Tuberculosis -----	7	16	-----	23
Typhoid -----	3	28	-----	31
Water pollution -----	5	3	1	9
Miscellaneous -----	1	3	1	5
				157
<b>Northern Branch at Sacramento:</b>				
Diphtheria -----	3	9	-----	12
Gonococcus infection -----	1	-----	-----	1
Malaria -----	1	3	-----	4
Tuberculosis -----	2	10	-----	12
Typhoid -----	1	6	-----	7
				36
<b>San Joaquin Valley Branch at Fresno:</b>				
Diphtheria -----	-----	2	-----	2
Typhoid -----	3	6	-----	9
				11
<b>Southern Branch at Los Angeles:</b>				
Diphtheria -----	1	1	-----	2
Typhoid -----	-----	14	1	15
				17
<b>Total number of examinations-----</b>				221

## Division of Preventive Therapeutics.

*Pasteur Treatment for the Prevention of Rabies by the State Hygienic Laboratory During the Month of September, 1913.*

	Treatment commenced	Treatment completed
Main Laboratory at Berkeley-----	21	18
Northern Branch at Sacramento-----	0	2
San Joaquin Valley Branch at Fresno-----	0	0
Southern Branch at Los Angeles-----	0	0
Laboratory of Sacramento Board of Health, by deputized bacteriologist -----	0	0
Laboratory of San Francisco Board of Health, by deputized bacteriologist -----	3	3
Laboratory of Los Angeles Board of Health, by deputized bacteriologist -----	0	0
Laboratory of Letterman General Hospital, Presidio, by deputized bacteriologist -----	0	1
	24	24

## Public Health Instruction.

*Participation in Instruction in Public Health During September, 1913.*

<b>Main Laboratory at Berkeley:</b>	
Bacteriological instruction outfits sent out-----	4
Bacteriological instruction outfits in use-----	20
Lectures or talks by the director-----	1

## Division of Epidemiological Investigations.

*Epidemiological Investigations During September, 1913.*

<b>Main Laboratory at Berkeley:</b>	
Special investigations by the director-----	3
Investigation of smallpox at San Jose.	
Investigation of a human case of plague at Martinez.	
Investigation of a human case of rabies at Santa Rosa.	



## REPORT OF BUREAU OF FOODS AND DRUGS.

PROF. M. E. JAFFA, Director.

The chemical work of the Laboratory for the month of September includes the examination of about ninety samples of miscellaneous food products, of which meats and ice creams form a prominent part.

Two of the samples of chopped meat examined show the presence of sulphur dioxide or sulfites. This result is a decided improvement on similar examinations conducted in former years. Similarly with reference to the samples of ice cream examined, very few showing any deficiency in butter fat, the standard for which is 12 per cent.

It is to be regretted, however, that inspectors are still submitting to the Laboratory a number of samples of canned "peas" colored by the use of copper salts. The use of copper salts in the greening of foods is prohibited by Food Inspection Decisions 148 and 149. An extract from the said decisions is here reprinted for the purpose of again emphasizing to dealers that the sale of canned goods colored with copper sulfate is in violation of the California pure food law.

The Food and Drugs Act of June 30, 1906, provides that a food is adulterated "if it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health." The act also provides that a food is adulterated "if it be \* \* \* colored \* \* \* in a manner whereby damage or inferiority is concealed." It is apparent from the findings of the Referee Board that all foods greened with copper salts are positively adulterated under the first above-quoted provision of the law, and that in certain cases foods may be adulterated under the second above-quoted provision.

The Secretary of Agriculture, therefore, will regard as adulterated under the Food and Drugs Act goods greened with copper salts which, on and after May 1, 1913, are offered for entry into the United States, or are manufactured or offered for sale in the District of Columbia or the territories, or are shipped in interstate commerce.

All previous food inspection decisions on the subject of greening of foods with copper salts are amended accordingly.

An exhibit from the State Food and Drug Laboratory will be installed at the general food exhibit, to be held at Venice, of the League of California Municipalities in conjunction with the Fifth Annual Conference of Health Officials of the State of California.

This food exhibit is under the general supervision of the Director of the State Laboratory, in accordance with the request of the League of California Municipalities and with the approval of the State Board of Health.

This is the second exposition under the general auspices of the State Board of Health, the first being held last year in the Mining Building on the University of California grounds under the same auspices.

It is to be hoped that these expositions will be of such educational value as to warrant their being a permanent part of the annual conference of the league. The main object being to eliminate from labels



and on packages, and advertising matter distributed in connection with the same, all intemperate advertising, that is, eliminate statements which are misleading or deceiving in any particular with reference to either nutritive value, medicinal value, or composition.

The following Food Inspection Decision has been received at the Laboratory since the publication of the last monthly Bulletin:

**Food Inspection Decision No. 152.**

**BRANDY.**

The Board of Food and Drug Inspection is of the opinion that brandy is the alcoholic distillate obtained solely from the fermented juice of fruit, distilled under such conditions that the characteristic bouquet, or volatile flavoring and aromatic principles, is retained in the distillate.

Grape brandy is the distillate obtained from grape wine under these conditions.

Apple, peach, and other fruit brandies are similarly prepared from the fermented juices of the respective fruits.

The board is of the further opinion that so-called brandy prepared from grain, potato, or other form of industrial alcohol, or from alcohol obtained from the by-products of wine manufacture, mixed with more or less true brandy or other flavoring material, is adulterated and misbranded unless labeled to indicate its true composition.

The above decision strengthens the position which has always been taken by the State Board of Health in defining brandy and differentiating between brandy and unfermented liquors.

The following list of Notices of Judgments is at hand from the Department at Washington, and interested parties wishing any separate notices should address the Director of the State Food and Drug Laboratory, University of California, Berkeley, Cal.:

Nos. 2505, 2514—Adulteration and Misbranding of Vinegar.

Nos. 2506, 2507—Adulteration and Misbranding of Spirits of Turpentine.

No. 2508—Adulteration of Tomato Pulp.

No. 2509—Misbranding of Kennebec Mixed Feed.

No. 2510—Adulteration and Misbranding of Crushed Oranges.

No. 2511—Misbranding of a Drug Habit Cure.

No. 2512—Adulteration and Misbranding of Corn Chops.

No. 2513—Misbranding of Lemon Extract; Misbranding of Vanilla Extract; Misbranding of Salad Dressing and Meat Sauce.

No. 2515—Adulteration of Macaroni Color.

No. 2516—Adulteration of Milk.

No. 2517—Adulteration and Alleged Misbranding of Cognac.

No. 2518—Adulteration of Oil of Thyme.



## REPORT OF BUREAU OF SANITARY ENGINEERING.

PROF. C. G. HYDE, Consulting Engineer.

During the month a painstaking canvass of the municipal sewerage systems and sewage treatment plants in the State was begun, and information in more or less detail was gathered for nearly all of the incorporated communities in California. Early in the month the Consulting Engineer prepared a paper, entitled "Stream Pollution and the Status of Controlling Legislation in California," which was presented to the convention of the American Public Health Association held at Colorado Springs during the month. Considerable time was devoted to a program dealing with public sanitation as related to water supplies and the disposal of sewage and refuse for a joint session of the League of California Municipalities and of the Association of State, County and Municipal Health Officers held during the convention of these bodies at Venice on Thursday, October 9th.

During the month several visits of investigation and inspection were made by the Consulting Engineer, as follows: On September 5th to Weed, with reference to a proposed sewerage system for the Weed Lumber Company; on September 6th to Sacramento, for a conference with members of the State Board of Health relative to legislation regulating water supplies and sewage disposal; on September 12th to Orange, to review the work of reconstruction of septic tanks to serve as double-story sedimentation and sludge digestion tanks operating on the Imhoff principle; on September 19th to Sonoma, to investigate the sewage disposal works of that community with particular reference to obviating nuisances caused by odors.



## REPORT OF BUREAU OF VITAL STATISTICS.\*

GEORGE D. LESLIE, Director.

L. V. BOYLE, Births, Deaths, Marriages.

G. P. JONES, Morbidity Returns.

*State Totals and Annual Rates.*—The following table shows for California as a whole the birth, death and marriage totals for the current and preceding months in comparison with those for the corresponding months of last year, as well as the annual rates per 1,000 population represented by the totals for the current and preceding months. The rates are based on an estimated midyear population of 2,671,491 for California in 1913, the estimate having been made by the Census Bureau method with slight modifications.

*Birth, Death and Marriage Totals, with Annual Rates per 1,000 Population for Current and Preceding Months for California: August.*

Month	Monthly total		Annual rate per 1,000 population: 1913
	1913	1912	
August—			
Births -----	3,747	3,288	16.5
Deaths -----	2,920	2,710	12.9
Marriages -----	2,612	2,619	11.5
July—			
Births -----	3,820	3,366	16.8
Deaths -----	3,108	2,982	13.7
Marriages -----	2,760	2,786	12.2

The August totals were greater this year than last for both births and deaths, especially for births, while the monthly marriage total was about the same each year.

*County Totals.*—The first table which follows below shows the monthly birth, death and marriage totals for the principal counties of the State, the list being limited to counties having a population of at least 25,000 according to the Federal Census of 1910. Totals are also shown for San Francisco and the other bay counties (Alameda, Contra Costa, Marin, and San Mateo), as well as for Los Angeles and Orange counties together.

*City Totals.*—The second of the following tables gives the birth and death totals for the principal freeholders' charter cities, the list including all chartered cities with a census population of at least 15,000 in 1910. Totals are given likewise for San Francisco in comparison with Oakland, Alameda, and Berkeley, the three cities adjoining one another on the east shore of San Francisco Bay, as well as for Los Angeles in comparison with neighboring chartered cities (Long Beach, Pasadena, Pomona, and Santa Monica).

\*The data upon births, deaths and marriages necessarily is delayed two months—one month for collection, one month for filing and tabulation. Other material and data refer to the month of September.



*Birth, Death and Marriage Totals, for Principal Counties: August.*

County	August, 1913		
	Births	Deaths	Marriages
California -----	3,747	2,920	2,612
Counties of more than 25,000 population (1910):			
Alameda -----	404	283	194
Butte -----	35	28	22
Contra Costa -----	71	25	23
Fresno -----	122	92	56
Humboldt -----	34	40	31
Kern -----	43	33	25
Los Angeles -----	1,012	738	725
Marin -----	9	13	91
Orange -----	42	36	125
Riverside -----	45	44	33
Sacramento -----	111	107	74
San Bernardino -----	55	45	55
San Diego -----	158	96	120
San Francisco -----	727	499	492
San Joaquin -----	59	72	59
San Mateo -----	25	23	39
Santa Barbara -----	27	28	23
Santa Clara -----	129	134	83
Santa Cruz -----	33	39	19
Solano -----	31	25	22
Sonoma -----	83	45	36
Tulare -----	59	41	18
Selected groups:			
San Francisco and other bay counties -----	1,236	843	839
Los Angeles and Orange counties -----	1,054	774	850

*Birth and Death Totals, for Principal Cities: August.*

City	August, 1913	
	Births	Deaths
FREEHOLDERS' CHARTER CITIES -----	2,455	1,722
Cities of more than 15,000 population (1910):		
Alameda -----	37	22
Berkeley -----	61	31
Fresno -----	55	26
Long Beach -----	35	26
Los Angeles -----	690	472
Oakland -----	276	176
Pasadena -----	60	35
Riverside -----	24	20
Sacramento -----	90	87
San Diego -----	113	70
San Francisco -----	727	499
San Jose -----	64	38
Stockton -----	10	36
Selected groups:		
San Francisco -----	727	499
Oakland, Alameda and Berkeley -----	374	229
Totals, bay cities -----	1,101	728
Los Angeles -----	690	472
Neighboring cities -----	123	89
Totals -----	813	561



*Causes of Death.*—The following table shows the classification of deaths in California for the current month, in comparison with the preceding month:

*Deaths from Certain Principal Causes, with Proportion per 1,000 Total Deaths, for Current and Preceding Month, for California: August.*

Cause of death	Deaths: August	Proportion per 1,000	
		August	July
ALL CAUSES -----	2,920	1,000.0	1,000.0
Typhoid fever -----	49	16.8	15.1
Malarial fever -----	8	2.7	1.9
Measles -----	12	4.1	4.2
Scarlet fever -----	4	1.4	1.6
Whooping-cough -----	20	6.9	5.1
Diphtheria and croup -----	6	2.1	1.6
Influenza -----	1	0.4	1.3
Other epidemic diseases -----	11	3.8	5.5
Tuberculosis of lungs -----	321	109.9	110.0
Tuberculosis of other organs -----	62	21.2	24.5
Cancer -----	202	69.2	73.0
Other general diseases -----	122	41.8	48.6
Meningitis -----	22	7.5	8.7
Other diseases of nervous system -----	254	87.0	78.5
Diseases of circulatory system -----	481	164.7	149.0
Pneumonia and broncho-pneumonia -----	127	43.5	42.8
Other diseases of respiratory system -----	41	14.0	19.3
Diarrhea and enteritis, under 2 years -----	135	46.2	52.4
Diarrhea and enteritis, 2 years and over -----	37	12.7	11.9
Other diseases of digestive system -----	175	59.9	60.2
Bright's disease and nephritis -----	173	59.3	70.8
Childbirth -----	19	6.5	15.8
Diseases of early infancy -----	121	41.4	34.7
Suicide -----	61	20.9	22.5
Other violence -----	316	108.2	95.6
All other causes -----	140	47.9	45.4

In August there were 481 deaths, or 16.5 per cent of all, from diseases of the circulatory system, and 383, or 13.1 per cent, from various forms of tuberculosis, heart disease thus leading tuberculosis greatly.

Other notable causes of death in August were: Violence, 377; diseases of the digestive system, 347; diseases of nervous system, 276; cancer, 202; Bright's disease and nephritis, 173; diseases of respiratory system, 168; and epidemic diseases, 111.

The deaths from epidemic diseases were as follows: Typhoid fever, 49; whooping cough, 20; measles, 12; malarial fever, 8; diphtheria and croup, 6; scarlet fever, 4; and all other epidemic diseases, 12.

The deaths from the three leading epidemic diseases reported for the month were distributed by counties as follows:

Typhoid fever		Whooping-cough		Measles	
Alameda -----	5	Kings -----	1	Fresno -----	2
Butte -----	1	Los Angeles -----	7	Imperial -----	1
Fresno -----	8	Orange -----	2	Los Angeles -----	2
Humboldt -----	3	Riverside -----	2	Orange -----	1
Kern -----	1	Sacramento -----	1	Placer -----	1
Kings -----	2	San Bernardino -----	1	Riverside -----	1
Los Angeles -----	5	San Francisco -----	2	San Francisco -----	1
Nevada -----	2	Santa Barbara -----	1	Santa Barbara -----	1
Placer -----	1	Santa Clara -----	2	Santa Clara -----	1
Sacramento -----	7	Tulare -----	1	Siskiyou -----	1
San Diego -----	3				
San Francisco -----	5				
San Joaquin -----	1				
Santa Clara -----	1				
Sonoma -----	2				
Tulare -----	2				
Total -----	49	Total -----	20	Total -----	12



*Geographic Divisions.*—The following table presents data for geographic divisions, including the metropolitan area, or San Francisco and the other bay counties (Alameda, Contra Costa, Marin, and San Mateo), in comparison with the rural counties of Northern and Central California:

*Deaths from Main Classes of Diseases, from Geographic Divisions: August.*

Geographic division	Deaths: August.										
	All causes	Epidemic diseases	Tuberculosis (all forms)	Cancer	Diseases of nervous system	Diseases of circulatory system	Diseases of respiratory system	Diseases of digestive system	Bright's disease and nephritis	Violence	All other causes
THE STATE -----	2,920	111	383	202	276	481	168	347	173	377	402
<i>Northern California</i> -----	354	19	42	20	37	60	15	31	15	71	44
Coast counties -----	160	7	19	7	30	26	11	15	6	30	9
Interior counties -----	194	12	23	13	7	34	4	16	9	41	35
<i>Central California</i> -----	1,548	57	169	119	138	262	105	184	86	202	226
San Francisco -----	499	11	51	42	44	96	37	58	39	50	71
Other bay counties ---	344	6	28	37	31	55	26	47	23	44	47
Coast counties -----	231	7	32	16	20	54	15	22	6	30	29
Interior counties -----	474	33	58	24	43	57	27	57	18	78	79
<i>Southern California</i> -----	1,018	35	172	63	101	159	48	132	72	104	132
Los Angeles -----	738	21	137	43	70	132	32	87	55	69	92
Other counties -----	280	14	35	20	31	27	16	45	17	35	40
<i>Northern and Central California</i> -----	1,902	76	211	139	175	322	120	215	101	273	270
Metropolitan area ---	843	17	79	79	75	151	63	105	62	94	118
Rural counties -----	1,059	59	132	60	100	171	57	110	39	179	152

*Sex and Age Periods.*—The proportion of the sexes among the 2,920 decedents in August was: Male, 1,803, or 61.7 per cent, and female, 1,117, or 38.3 per cent.

The following table shows the age distribution by numbers and per cents of deaths classified by sex:

*Deaths Classified by Sex and Age Periods, with Per Cents by Age Periods, for California: August.*

Age period	Deaths			Per cent		
	Total	Male	Female	Total	Male	Female
ALL AGES -----	2,920	1,803	1,117	100.0	100.0	100.0
Under 1 year -----	378	221	157	13.0	12.3	14.1
1 to 4 years -----	121	57	64	4.2	3.2	5.7
5 to 14 years -----	88	50	38	3.0	2.8	3.4
15 to 24 years -----	170	111	59	5.8	6.1	5.3
25 to 34 years -----	264	175	89	9.0	9.7	8.0
35 to 44 years -----	328	209	119	11.2	11.6	10.7
45 to 54 years -----	370	251	119	12.7	13.9	10.6
55 to 64 years -----	366	234	132	12.5	13.0	11.8
65 years and over -----	835	495	340	28.6	27.4	30.4

This table shows that relatively more females than males died at the age periods under 15 years as well as at 65 years and over, while



relatively more males than females died at the age periods from 15 to 64 years.

*Occupations.*—The table below gives, for deaths 15 years and over, the number of men and women for whom some occupation was reported in contrast with those for whom no gainful occupation was shown.

*Deaths, 15 Years and Over, Classified by Sex and Occupation, with Per Cents by Sex, for California: August.*

	Deaths			Per cent male	Per cent female
	Total	Male	Female		
15 YEARS AND OVER -----	2,333	1,475	858	63.2	36.8
Occupation reported -----	1,348	1,256	92	93.2	6.8
No gainful occupation -----	985	219	766	22.2	77.8

Of the 1,348 decedents for whom occupations were reported the males numbered 1,256, or 93.2 per cent, and the females only 92, or 6.8 per cent.

The following table shows the distribution of male decedents 15 years and over, engaged in the main kinds of occupation :

*Deaths of Males Fifteen Years and Over Engaged in Gainful Occupations, Classified by Kind of Occupation, with Per Cents, for California: August.*

Kind of occupation	Males 15 years and over	
	Deaths	Per cent
ALL OCCUPATIONS -----	1,256	100.0
Professional -----	63	5.0
Clerical and official -----	98	7.8
Mercantile and trading -----	92	7.3
Public entertainment -----	23	1.8
Personal service, police and military -----	39	3.1
Laboring and servant -----	273	21.7
Manufacturing and mechanical industry -----	262	20.9
Agriculture, transportation and other outdoor pursuits -----	394	31.4
All other occupations -----	12	1.0

Of the 1,256 male decedents for whom occupations were reported, 394, or 31.4 per cent, were engaged in agriculture, transportation, and other outdoor pursuits; 273, or 21.7 per cent, in laboring and servant work; 262, or 20.9 per cent, in manufacturing and mechanical industry; and altogether 327, or 26.0 per cent, in professional, clerical and official, mercantile and trading, and all other occupations.

It should be noted that the figures on deaths occurring in different occupations are necessarily affected by the fact that in California a large number of men are engaged in agriculture and other outdoor pursuits, while relatively few follow professional and similar occupations which show small numbers of deaths.

#### Morbidity Report for September.

Smallpox appeared in several new places during September. A few additional cases were reported from Nevada and Santa Clara counties, where there were outbreaks during the previous month, but the situation in both places seems to be well in hand.



Typhoid fever continues to be reported, nearly as many cases occurring in September as in August, the numbers being 165 and 183, respectively.

It is interesting to note that most of these cases are reported from the same places every month, the mountain counties and those having large rural populations being represented as well as the large urban centers.

The number of poliomyelitis cases for September is lower than usual, only 3 cases having been reported. There were 10 cases reported in August and 16 in July.

With the opening of the schools, a few more cases of scarlet fever and diphtheria are reported, although the increase is not so marked as is usual at this time of year.

#### Poliomyelitis.

	June		July		August		September	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
1912 -----	31	1	188	36	138	31	42	14
1913 -----	3	1	16	4	10	3	3	0

During June, July, August and September of 1912 there were 400 cases of poliomyelitis reported, but during the corresponding months of 1913 only 32 cases were reported. During both years most of these cases occurred in July and August, the numbers falling off appreciably in September. The percentage of fatal cases was about 25 per cent for both 1912 and 1913.

#### Smallpox.

	June		July		August		September	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
1912 -----	111	0	40	4	69	6	29	1
1913 -----	52	3	41	0	35	0	35	0

There were about twice as many cases of smallpox during the summer months of 1912 as in 1913. However, there were greater numbers of cases at two definite foci in 1912, while during this period for 1913, the cases were distributed over the State.

#### Typhoid Fever.

	June		July		August		September	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
1912 -----	83	38	190	55	231	59	86	38
1913 -----	95	34	213	47	183	49	165	65

Typhoid fever flourishes, as usual, during the summer months. More cases have been reported during the summer of 1913 than during the same period for 1912, the number of cases being 590 and 656, respectively.



## Smallpox.

Table Showing Distribution of Cases Reported During September, 1913.

Counties and cities	Number of new cases reported during month	Deaths	Vaccination history of cases			
			Number vaccinated within seven years preceding attack	Number last vaccinated more than seven years preceding attack	Number never successfully vaccinated	Vaccination history not obtained or uncertain
Humboldt County -----						
Eureka -----	1					1
Kern County -----	1				1	
Los Angeles County -----						3
Los Angeles -----	3					
Lake County -----						
Kelseyville -----	1				1	
Merced County -----	1			1		
Nevada County -----	1				1	
Nevada City -----	7				7	
Placer County -----						
Colfax -----	2				2	
San Francisco -----	2				2	
San Joaquin County -----	3					3
Stockton -----	1					1
Santa Clara County -----	1				1	
San Jose -----	7			1	6	
Sunnyvale -----	2				2	
Sierra County -----	1				1	1
Yolo County -----	1					
Totals -----	35			2	24	9

## Typhoid Fever.

Monthly report for September, 1913.

Counties and cities	Number of new cases reported during month	Counties and cities	Number of new cases reported during month
Alameda County -----		Riverside County -----	
Alameda -----	2	Riverside -----	2
Berkeley -----	1	Sacramento County -----	4
Hayward -----	1	Sacramento -----	11
Oakland -----	15	San Diego County -----	
Butte County -----	1	National City -----	1
Gridley -----	1	San Diego -----	3
Colusa County -----	4	San Francisco -----	18
Contra Costa County -----	1	San Joaquin County -----	
Fresno County -----	1	Lodi -----	1
Selma -----	4	San Mateo County -----	
Humboldt County -----		San Mateo -----	2
Eureka -----	2	Santa Clara County -----	4
Imperial County -----	1	Gilroy -----	1
Calexico -----	1	Shasta County -----	1
El Centro -----	3	Sierra County -----	
Kern County -----	1	Loyalton -----	2
Lassen County -----		Siskiyou County -----	1
Susanville -----	3	Solano County -----	
Los Angeles County -----		Benicia -----	1
Long Beach -----	1	Dixon -----	1
Los Angeles -----	30	Sonoma County -----	2
Madera County -----	1	Healdsburg -----	2
Mariposa County -----	3	Stanislaus County -----	
Mendocino County -----	2	Newman -----	1
Willits -----	6	Turlock -----	6
Monterey County -----	1	Yolo County -----	
King City -----	1	Winters -----	1
Orange County -----		Yuba County -----	
Santa Ana -----	3	Wheatland -----	1
Placer County -----	1		
Plumas County -----	1	Total -----	165



**Poliomyelitis (Infantile Paralysis).**  
*Monthly report for September, 1913.*

Counties and cities	Number of new cases reported during month
Los Angeles County:	
Los Angeles .....	1
Santa Monica .....	1
Madera County:	
Madera City .....	1
Total .....	3

*Scarlet Fever, Measles, Diphtheria, Dysentery, and Other Diseases Notifiable in the State.*

*Monthly report for September, 1913.*

Disease	Total number of new cases reported during month
Scarlet fever .....	84
Measles .....	23
Diphtheria .....	118
Dysentery .....	5
Tuberculosis .....	204
Chickenpox .....	47
Malaria .....	12
Pneumonia .....	40
Tetanus .....	3
German measles .....	4
Syphilis .....	5
Mumps .....	45
Whooping-cough .....	52
Erysipelas .....	10



## A SPECIAL REPORT ON THE POSSIBILITY OF THE TRANSMISSION OF DISEASES BY THE MOUTH- PIECE OF THE PUBLIC TELEPHONE.

By ESTHER M. SKOLFIELD, A.B., Assistant Bacteriologist,  
State Hygienic Laboratory.

Under date of June 18, 1913, Dr. W. F. Snow, Secretary of the State Board of Health, instructed the Director of the State Hygienic Laboratory by letter to have an investigation made as to the possibilities of public telephones transmitting disease. Investigation of the literature showed that the subject had already been extensively studied. This report will present a few simple laboratory experiments performed at the State Hygienic Laboratory, and also the principal results of previous workers.

Various manufacturers have turned out devices to be attached to the mouthpieces of telephones, and the advertising circular of one of these companies contains this paragraph:

“Nowadays every one uses the telephone, not only the healthy but also the diseased; not only the cleanly but also the filthy. The telephone mouthpiece is coughed, sneezed, exhaled and sputtered into, and it follows as an unavoidable consequence that be the mouthpiece of hard rubber, glass or metal, not only it, but the diaphragm beyond, becomes unsanitary, foul and the depository of dust, unhygienic moisture and bacteria, and the necessity of guarding against contamination therefrom is certainly as great as in case of the towel, drinking cup,” etc.

Stanley<sup>1</sup> expresses public opinion perhaps better when he says that particles of sputum fly into the transmitter and adhere till dried into dust and this dust is stirred up by subsequent users of the telephone and is taken up through the mouth.

In an effort to determine the sanitary condition of the average telephone mouthpiece, a bacterial count was made on the mouthpieces of three telephones in our laboratory building. The outside of the mouthpiece was dusted and handled with sterile gauze, the inside not being touched. The mouthpiece was then placed in a sterile beaker and washed with 20 c.c. of sterile water for 30 minutes and the wash water was then plated in duplicate on nutrient neutral agar in quantities of 1 c.c. and 1/10 c.c. One set of plates was incubated at 37°C. and the other at 20°C., and counts were made after 48 hours' incubation. The number of bacteria per mouthpiece was estimated and the morphology studied. The counts showed a majority of low temperature growing bacteria and were as follows:

Telephones	Number bacteria growing	
	20° C.	37° C.
No. 1.....	80	60
No. 2.....	200	60
No. 3.....	570	500



The kinds of organisms were streptococci, staphylococci, large and small diplococci, different sized chained and unchained bacilli, large spore-bearing bacilli and molds, any of which might occur in the dust of rooms, and some of which might have come directly from the mouth.

The extent to which people in talking into the transmitter may infect it with mouth bacteria was studied experimentally by having persons talk for from one to two minutes into sterile petri dishes held vertically two inches from the lips, and then pouring the plates with agar and counting the bacteria after 48 hours' incubation. The counts showed 0, 1, 2, 10, and 67 bacteria per conversation, but the highest count was caused by coughing into the petri dish. The bacteria were streptococci, diplococci, and various kinds of bacilli. Two plates were used as controls; one showed two colonies and the other was sterile.

Another simple experiment was conducted in the laboratory to find out if in using a dirty telephone, dust would be stirred up from the transmitter and blown back on to the lips of the user. Sterile moist air was obtained by passing air from a bellows through concentrated sulphuric acid and then through warm sterile water. A strong intermittent stream of the air was blown for from 1 to 2 minutes against a mouthpiece which had a sterile agar plate placed vertically two inches in front of it. The plates were incubated and the colonies of bacteria counted. Control plates with air blown directly against them showed one or two colonies. When the transmitter from one office telephone was used, the plate was sterile, but in another case the plate had four colonies. A dirty, wet mouthpiece, taken from a public telephone and dried, gave four bacteria on the agar plate. Another test, made with an ordinarily dirty mouthpiece, sprayed with a broth culture of *bacillus prodigiosus* and dried, showed five bacteria, only one of which was *bacillus prodigiosus*. As a control, a mouthpiece was sprinkled with dust, sprayed with a broth culture of staphylococci, dried and then tested. The plate had many colonies of staphylococcus, showing that if the dirt on the public telephone transmitters had been free dust, as Stanley<sup>1</sup> claimed, the plates should have shown a higher count.

During an investigation of "The Antiseptic Telephone Transmitter," made in the California State Hygienic Laboratory by Miss Elsie Cole<sup>2</sup> in 1909, the telephones used in the laboratory were examined and the commoner forms of bacteria like the *staphylococci* and *bacillus subtilis* were found.

Klein<sup>3 4</sup> and Spitta<sup>5</sup> in London, and Bissell<sup>6</sup> in Buffalo have done excellent work in examining public telephone transmitters for diphtheria and tubercle bacilli. Bissell<sup>6</sup> examined 25 cultures from the inner surfaces of public telephone transmitters and failed to find any diphtheria bacilli. Klein<sup>3</sup> in 1905, failed to find either tubercle or diphtheria bacilli on twelve mouthpieces removed from public call boxes. In 1908<sup>4</sup> he examined six mouthpieces for tubercle bacilli and five were negative, but on the sixth he found a bit of mucus containing acid fast bacilli which produced typical lesions in two guinea-pigs.

The results of Klein were confirmed by Spitta<sup>5</sup>, who was unable to recover tubercle bacilli from telephone mouthpieces, although his experiments spread over a period of more than a year, and the instruments examined were telephones in busy call offices and also those used by patients in a hospital for consumptives. Dr. Spitta's conclusions were



that the transmission of tuberculosis by the telephone mouthpiece is practically impossible.

Ten cultures made from swabbings of public telephones in Berkeley, some of which had just been used and were wet with drops of moisture, were all negative for diphtheria. They showed diplococci, streptococci, staphylococci, and different kinds of bacilli. The instruments were located in stores, University buildings, the railway depot, and in the office of the telephone company. Those in the office of the telephone company and the depot, though moist, showed evidence of frequent cleaning, because the swabs used on them were not darkened, but some of the other mouthpieces were gray and gummy with dirt. The dirt, however, seemed to stick and could not be dislodged by a forcible outward breath.

The transmitters in the call boxes of the Ferry Building were inspected late on the evening of a busy day and were found dry and fairly clean, except for signs of dried moisture. It was learned that the clean condition of these mouthpieces, and those in the Berkeley office of the telephone company, was due to daily cleansing with a disinfectant, but the local manager of the company said that this cleansing of the mouthpieces was not required and was left to the discretion of the operators. In London, it is required that the Stock Exchange telephones be sprayed daily with a disinfectant.<sup>7</sup> One state, Massachusetts, besides drinking-cup laws, has two laws relating to mouthpieces, but these laws do not apply to telephones.<sup>8</sup>

The public telephone transmitter could be classed with the public drinking cup if every user touched the rim with his moistened lips, but this when done is usually accidental.

#### Summary.

People in using a telephone may infect the inner surface of the transmitter with particles of saliva, but the three mouthpieces tested showed a majority of organisms growing better at room temperature than at body temperature.

Public telephone mouthpieces are often wet with condensed moisture from the breath, and then the only possibility of the transmission of disease is by direct contact. When the mouthpiece is dry the infectious dirt does not appear to become free dust and it is practically impossible for germs on transmitters to be blown back on to the mouth during a telephone call.

Mouthpieces in busy call offices soon become gummy and unsanitary in appearance unless regularly cleaned, and therefore public telephone mouthpieces should be wiped off daily with a clean damp cloth.

Diphtheria bacilli were not found on the ten public telephone mouthpieces examined, and the work of Bissell, Klein, and Spitta shows that it is practically impossible to contract diphtheria or tuberculosis from public telephone mouthpieces.

Even in occasional cases of direct contact the public telephone mouthpiece can not be compared to the public drinking cup.



### Conclusions.

1. The danger of infection from public telephones is probably overestimated.

2. Mouthpieces in frequent use become unsightly if not cleaned at short intervals.

3. From our own observations and the previous work of others we have formulated the following observations regarding "sanitary" devices for attachment to telephone transmitters: "Antiseptic" transmitters of the type investigated in the State Hygienic Laboratory in 1909<sup>2</sup> are entirely without value. Mechanical devices which protect and conceal the mouthpiece with fresh paper may have considerable value from the æsthetic standpoint and may possibly prevent a few infections from contact between the lips and the transmitter.

### References.

<sup>1</sup>Stanley, R.S.; Dangers of Infection which Lurk in the Telephone. *Charlotte Med. Jour.*, 1905, XXVI, 149-152.

<sup>2</sup>An Antispetic Telephone Transmitter which isn't Antiseptic. *Monthly Bulletin, California State Board of Health*, 1909, IV, 98.

<sup>3</sup>Reported by Collingridge; *Jour. A.M.A.*, 1905, XLIV, 1866.

<sup>4</sup>Reported by Allan; *Lancet*, 1908, I, 1862.

<sup>5</sup>Spitta; *Abst. Jour. A.M.A.*, 1912, XLVIII, 1026.

<sup>6</sup>Bissell, Wm. G.; Does the Public Telephone Transmit Disease? *Buffalo Med. Jour.* 1902-3, n.s. XLII, 408-410.

<sup>7</sup>Allan, F. J.; The Public Telephone Call Office as a Factor in the Spread of Disease. *Lancet*, 1908, I, 1862.

<sup>8</sup>Public Health Bulletin No. 57, U. S. Public Health Service, 1912, p. 10.



# LIST OF COUNTY AND CITY HEALTH OFFICERS.

## Alameda County—

Dr. C. L. McKown-----Niles  
Alameda-----Dr. A. Hieronymus  
Albany-----Dr. F. R. Wollsey  
Berkeley-----Dr. J. J. Benton  
Emeryville-----Dr. A. T. Drennan  
Hayward-----Dr. F. W. Browning  
Livermore-----Dr. H. G. McGill  
Oakland-----Dr. Allen F. Gillihan  
Piedmont-----Mr. George T. Burchaell  
Pleasanton-----Dr. J. Hal Cope  
San Leandro-----Mr. Budd Eber

## Alpine County—

Mr. Fred S. Dunlap-----Markleeville

## Amador County—

Dr. E. E. Endicott-----Jackson  
Jackson-----George Hambric  
Sutter Creek-----Dr. J. H. McLaughlin

## Butte County—

Dr. L. Q. Thompson-----Gridley  
Biggs-----Dr. O. C. Hawkins  
Chico-----Mr. G. H. Taylor  
Gridley-----Dr. L. L. Thompson  
Oroville-----Dr. W. F. Gates

## Calaveras County—

Dr. Geo. F. Pache-----Angels  
Angels-----Dr. E. W. Weirich

## Colusa County—

Dr. C. A. Poage-----Colusa  
Colusa-----Dr. C. A. Poage

## Contra Costa County—

Dr. W. S. George-----Antioch  
Antioch-----Dr. W. S. George  
Concord-----Dr. F. F. Neff  
Hercules-----Dr. M. L. Fernandez  
Martinez-----Dr. E. E. Brown  
Pinole-----  
Pittsburg-----Dr. F. S. Gregory  
Richmond-----Dr. Chas. R. Blake

## Del Norte County—

Dr. E. M. Fine-----Crescent City  
Crescent City-----Dr. E. M. Fine

## El Dorado County—

Dr. L. M. Leisenring-----Placerville  
Placerville-----P. J. Hall

## Fresno County—

Dr. G. L. Long-----Fresno  
Clovis-----M. S. McMurty  
Coalinga-----Dr. C. W. Hutchison  
Fowler-----Dr. C. O. Mitchel  
Fresno-----Dr. L. R. Willson  
Kingsburg-----  
Sanger-----Dr. Powers  
Selma-----Dr. F. H. Williams

## Glenn County—

Dr. J. A. Randolph-----Willows  
Orland-----Dr. D. L. Martin  
Willows-----Dr. J. T. Gardner

## Humboldt County—

Dr. Carl T. Wallace-----Eureka  
Arcata-----Dr. G. W. McKinnon  
Blue Lake-----Dr. G. N. Wood  
Eureka-----Dr. L. A. Wing  
Ferndale-----Dr. J. A. Lane  
Fortuna-----Dr. Geo. S. Loveren

## Imperial County—

Dr. Virgil McCoombs-----El Centro  
Brawley-----Mr. S. A. Armstrong  
Calxico-----Dr. W. F. Smith  
El Centro-----M. A. Stover  
Imperial-----Dr. C. E. Standlee

## Inyo County—

Dr. I. J. Woodin-----Independence  
Bishop-----Dr. C. E. Turner

## Kern County—

Dr. G. M. Bumgarner-----Bakersfield  
Bakersfield-----H. Farris  
Maricopa-----Dr. H. N. Taylor  
Taft-----Dr. F. C. Galehouse  
Tehachapi-----Dr. N. J. Brown, Jr.  
McKittrick-----G. M. Chittwood

## Kings County—

Dr. C. L. Scott-----Hanford  
Lemoore-----Dr. E. H. Byron  
Hanford-----Dr. C. L. Scott

## Lake County—

Dr. W. E. Upton-----Kelseyville  
Kelseyville-----Dr. W. E. Upton  
Lakeport-----J. G. West

## Lassen County—

Dr. R. W. T. Garner-----Susanville  
Susanville-----Dr. E. S. Drucks

## Los Angeles County—

Dr. E. O. Sawyer-----Los Angeles  
Alhambra-----Dr. F. E. Corey  
Arcadia-----Dr. C. D. Gaylord  
Avalon-----Percy E. Mackey  
Azusa-----Dr. John E. Hill  
Burbank-----Dr. E. H. Thompson  
Claremont-----Dr. F. W. Thomas  
Compton-----J. W. Stone  
Covina-----Dr. J. D. Reed  
Eagle Rock-----Dr. C. H. Phinney  
El Monte-----Dr. S. L. Corpe  
Glendale-----Dr. R. E. Chase  
Glendora-----Dr. C. H. Wood  
Hermosa Beach-----B. F. Brown  
Huntington Park-----Dr. W. Thompson  
Inglewood-----Dr. H. A. Putnam  
Long Beach-----Dr. W. H. Newman  
Lordsburg-----Dr. J. E. Hubble  
Los Angeles-----Dr. L. M. Powers  
Manhattan Beach-----

Monrovia-----Dr. Abram Hostetter  
Pasadena-----Dr. Stanley P. Black  
Pomona-----Dr. Will H. Holmes  
Redondo Beach-----Dr. D. R. Hancock  
San Fernando-----Dr. Kenneth W. Allen  
San Marino-----  
Santa Monica-----Dr. W. H. Parker  
Sawtelle-----Dr. A. B. Hromadka  
Sierra Madre-----Dr. R. H. Mackerras  
South Pasadena-----Dr. C. A. Whiting  
Tropico-----Dr. Wm. C. Mabry  
Venice-----Dr. W. M. Kendall  
Vernon-----Dr. O. R. Stafford  
Watts-----Dr. J. L. Lamb  
Whittier-----Dr. W. H. Stokes  
San Gabriel-----Dr. Ruth Purcell

## Madera County—

Dr. Dow H. Ransom-----Madera  
Madera-----Dr. Dow H. Ransom

## Marin County—

Dr. J. H. Kuser-----Novato  
Belvedere-----Dr. Florence Scott  
Larkspur-----  
Mill Valley-----Capt. M. Staples  
Ross-----C. A. Meussdorfer  
San Anselmo-----Dr. Chipman  
San Rafael-----Dr. W. J. Stone  
Sausalito-----Dr. A. H. Mays

## Mariposa County—

Dr. T. W. Gallion-----Mariposa

## Mendocino County—

Dr. Judson Liftchild-----Ukiah  
Fort Bragg-----Dr. L. C. Gregory  
Point Arena-----  
Potter Valley-----F. C. Mosier  
Ukiah-----Dr. J. Liftchild  
Willits-----Dr. F. C. Gunn

## Merced County—

Dr. J. H. Mudd-----Merced  
Los Banos-----Dr. J. L. McClelland  
Merced-----Dr. Brett Davis

## Modoc County—

Dr. W. E. Coppedge-----Alturas  
Alturas-----Dr. John Stile

## Mono County—

Dr. R. A. Cushman-----Bridgeport

## Monterey County—

Dr. Garth Parker-----Salinas  
King City-----Dr. D. Brumwell  
Monterey-----R. L. Anderson  
Pacific Grove-----Charles E. Tuck  
Salinas-----F. A. Abbott